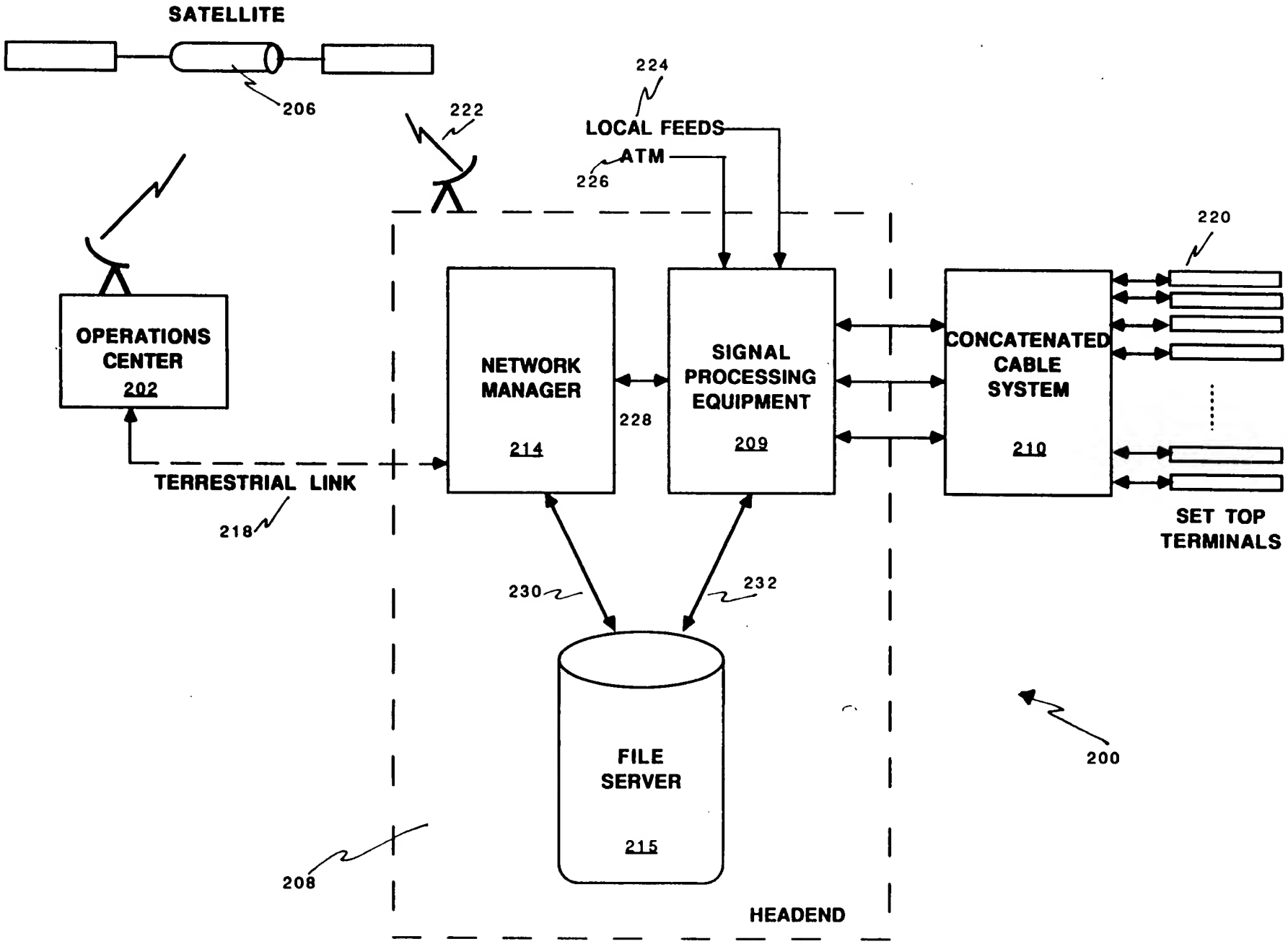


FIG. 1

09285249 .040209

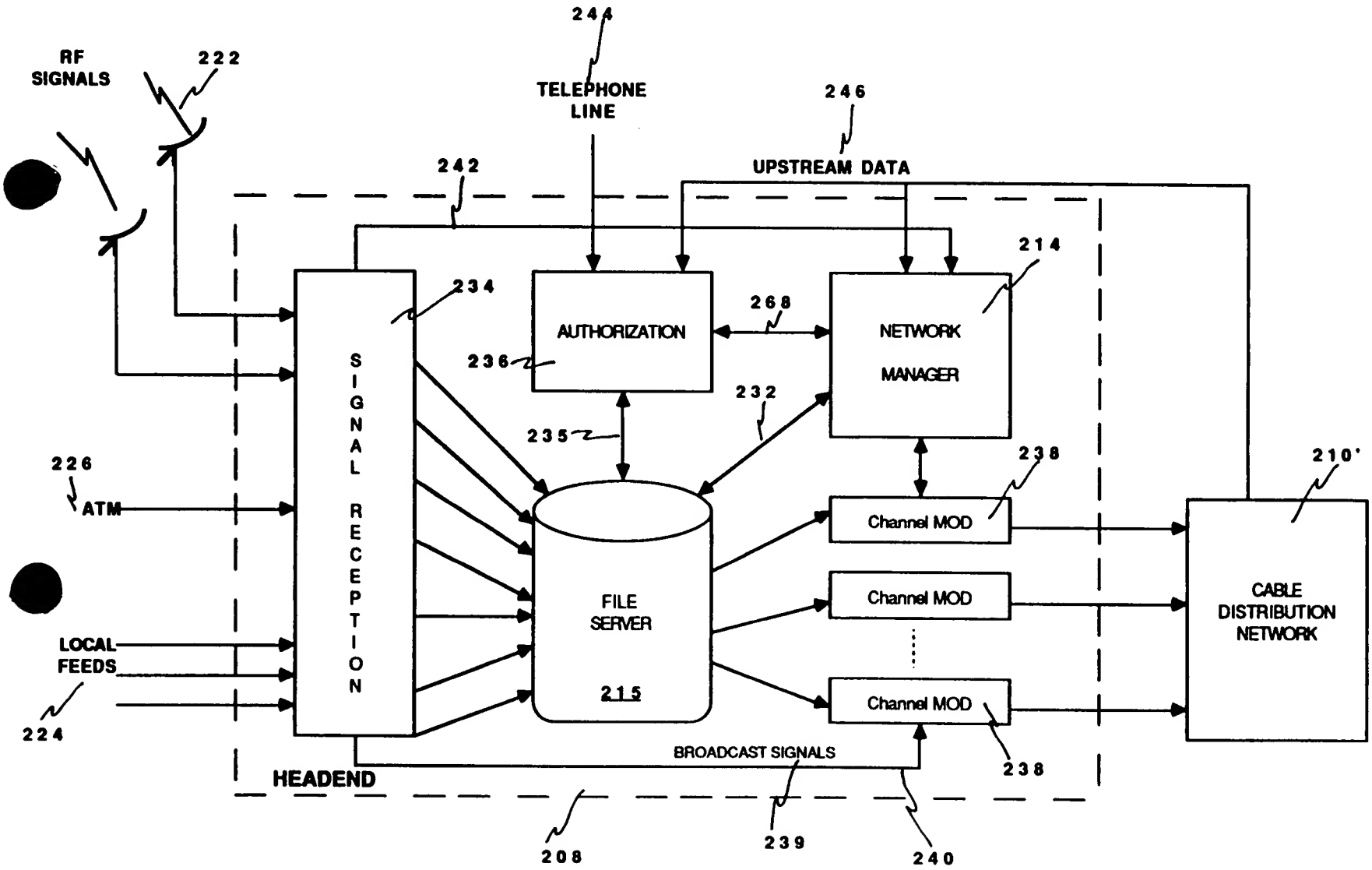
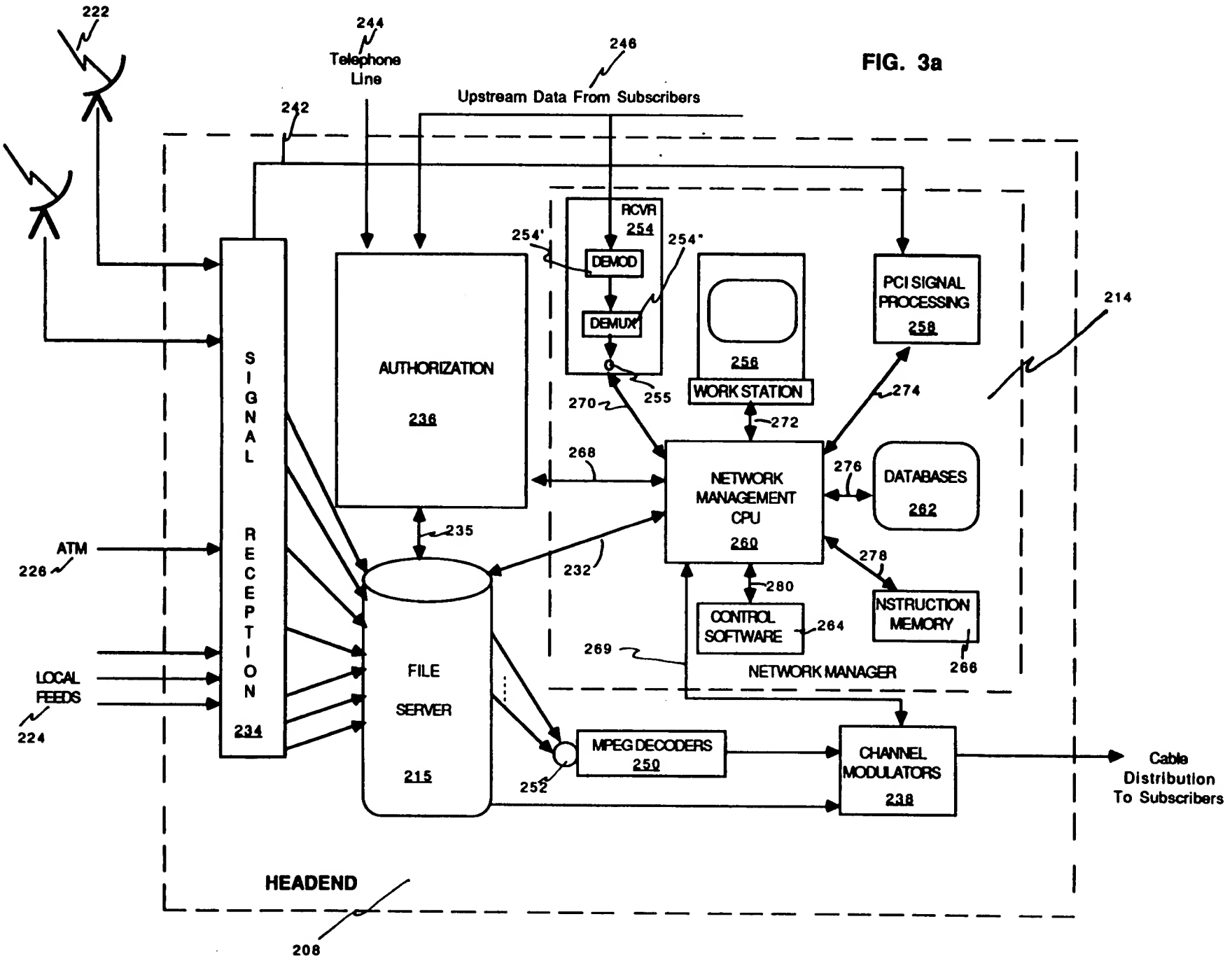


FIG. 2

09285249 .010209


222
244
Telephone Line
246
Upstream Data From Subscribers
242
FIG. 3a
RCVR 254
254'
254"
DEMOD
DEMUX
255
AUTHORIZATION 236
256
WORK STATION
PCI SIGNAL PROCESSING 258
214
270
272
274
268
NETWORK MANAGEMENT CPU 260
276
DATABASES 282
SIGNAL RECEPTION 234
235
232
278
280
CONTROL SOFTWARE
264
INSTRUCTION MEMORY
266
269
NETWORK MANAGER
ATM
226
LOCAL FEEDS
224
FILE SERVER 215
MPEG DECODERS 250
252
CHANNEL MODULATORS 238
Cable Distribution To Subscribers
HEADEND
208

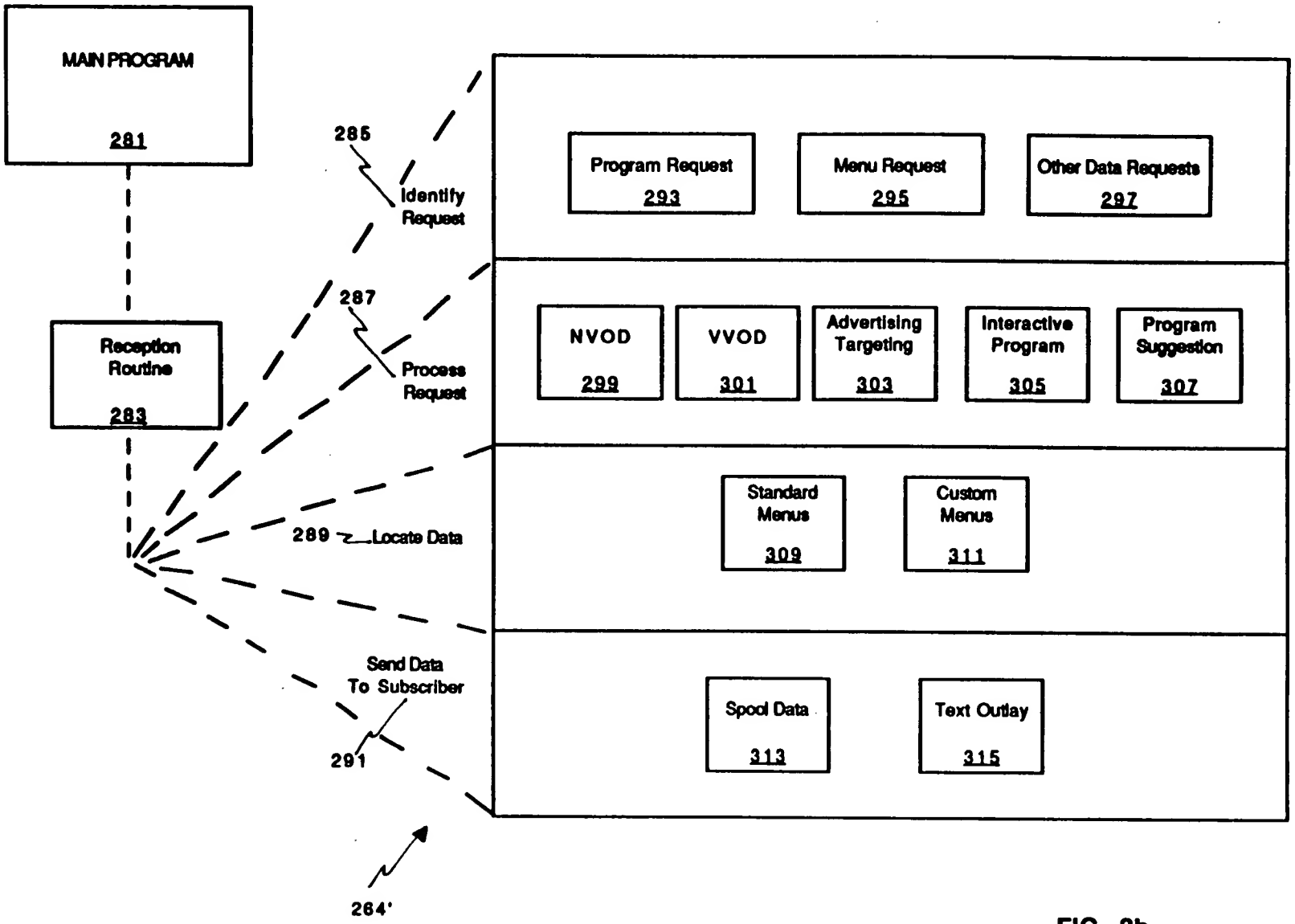

MAIN PROGRAM
281
Reception Routine
283
285
Identify Request
287
Process Request
289
Locate Data
Send Data To Subscriber
291
264'
Program Request
293
Menu Request
295
Other Data Requests
297
NVOD
299
VVOD
301
Advertising Targeting
303
Interactive Program
305
Program Suggestion
307
Standard Menus
309
Custom Menus
311
Spool Data
313
Text Outlay
315

FIG. 3b

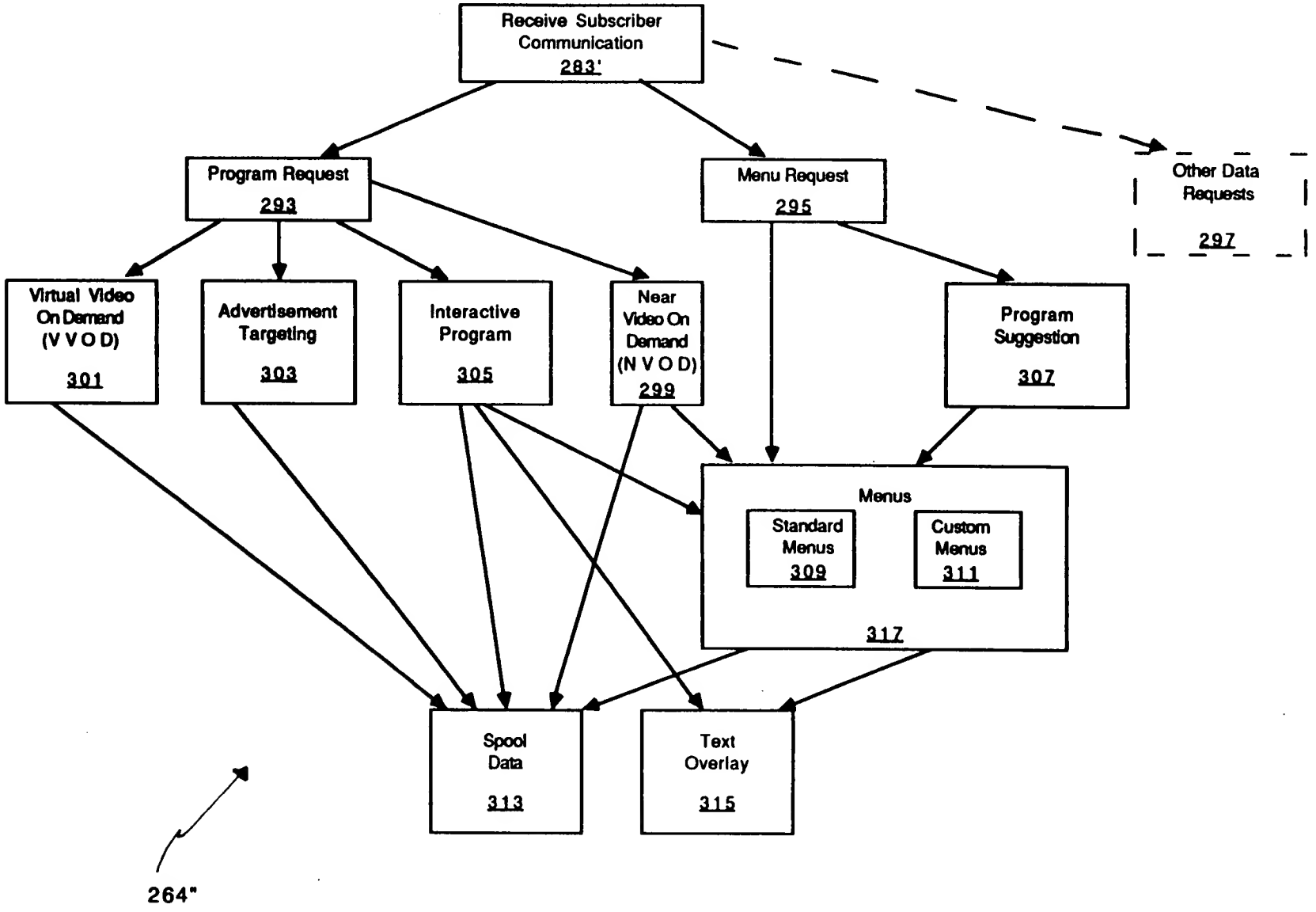

Receive Subscriber Communication
283'
Program Request
293
Menu Request
295
Other Data Requests
297
Virtual Video On Demand (V V O D)
301
Advertisement Targeting
303
Interactive Program
305
Near Video On Demand (N V O D)
299
Program Suggestion
307
Menus
Standard Menus
309
Custom Menus
311
317
Spool Data
313
Text Overlay
315
264"

FIG. 3c

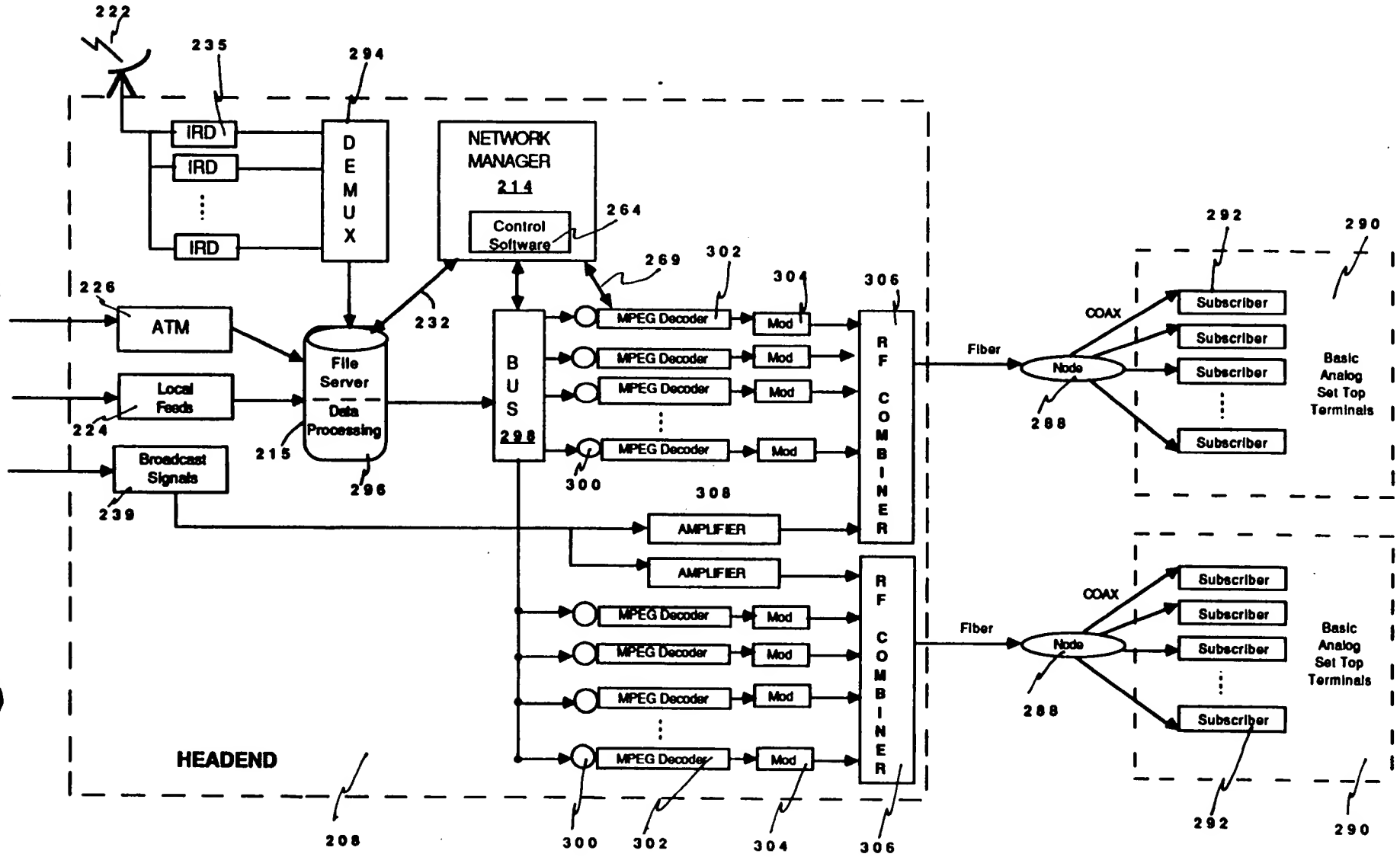


FIG. 4

09295249 .041399

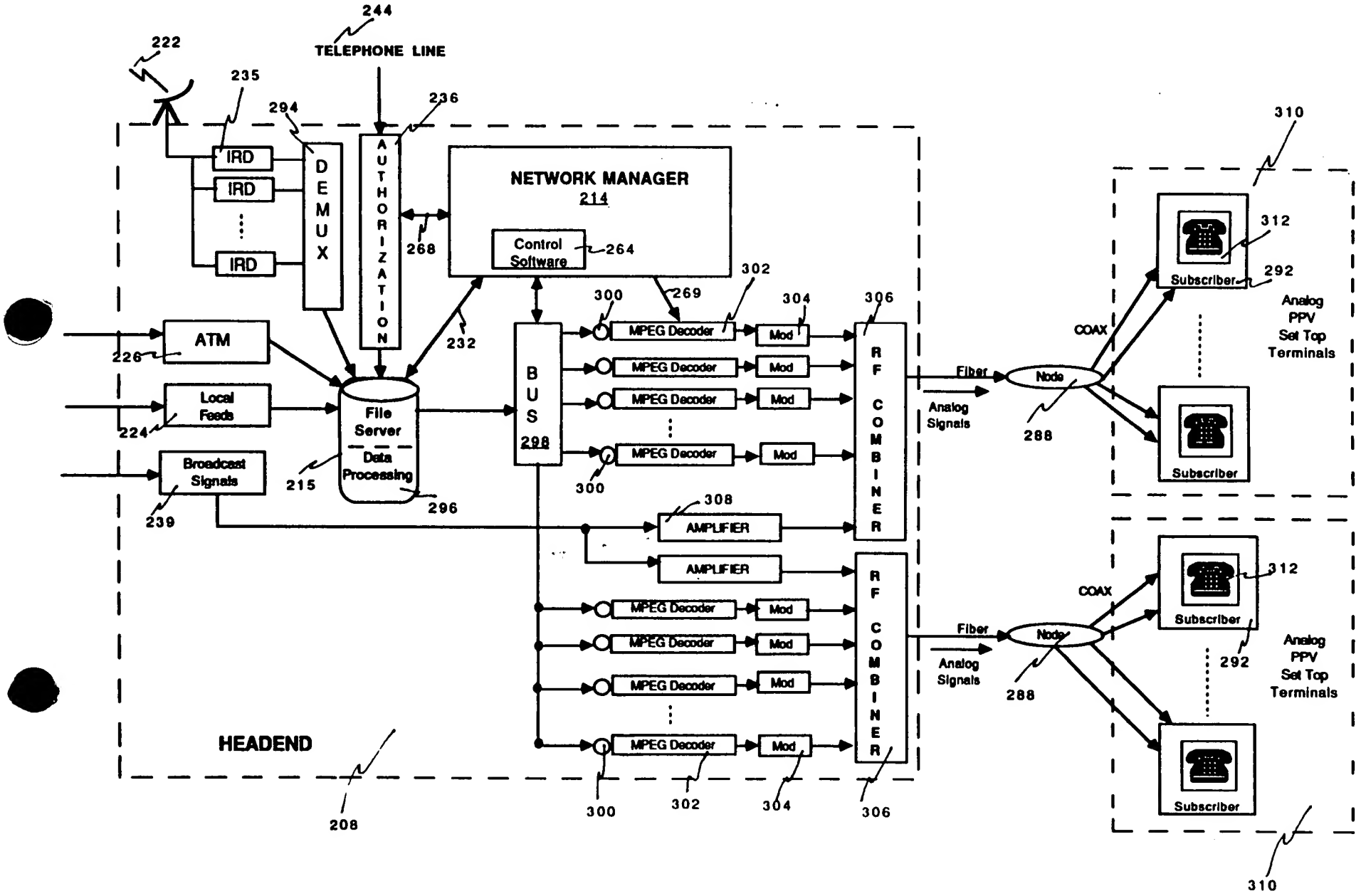

244
TELEPHONE LINE
222
235
294
236
IRD
IRD
IRD
DEMUX
AUTHORIZATION
NETWORK MANAGER
214
Control Software
264
268
269
232
302
300
304
306
ATM
226
Local Feeds
224
Broadcast Signals
239
File Server
Data Processing
215
296
BUS
298
MPEG Decoder
Mod
AMPLIFIER
308
RF COMBINER
HEADEND
208
Fiber
Analog Signals
Node
288
COAX
Subscriber
312
292
Analog PPV Set Top Terminals
310

FIG. 5

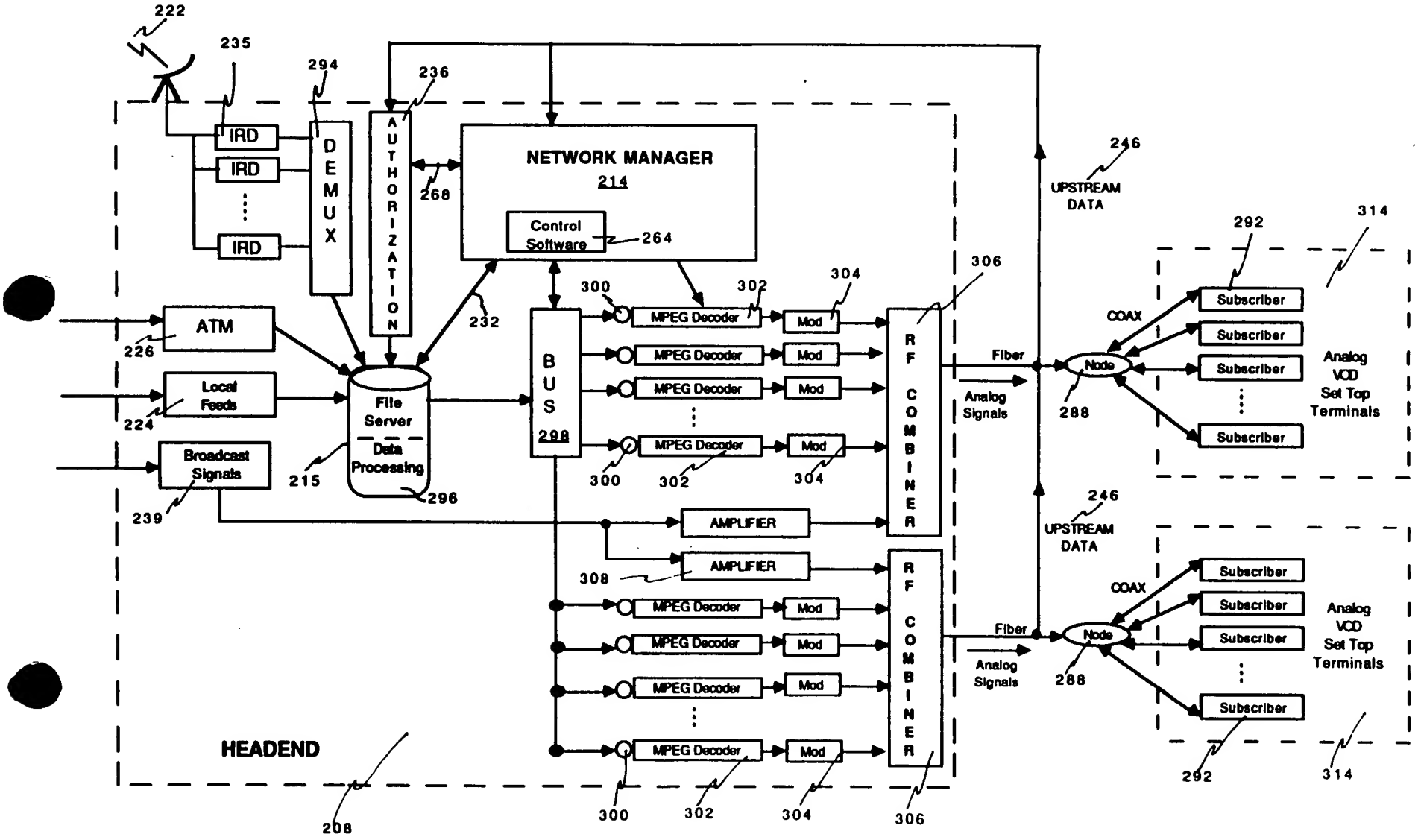

222
235
294
236
IRD
IRD
IRD
DEMUX
AUTHORIZATION
268
NETWORK MANAGER
214
Control Software
264
246
UPSTREAM DATA
292
314
306
300
302
304
MPEG Decoder
Mod
ATM
226
Local Feeds
224
Broadcast Signals
239
File Server
Data Processing
215
296
232
BUS
298
RF COMBINER
Fiber
Analog Signals
COAX
Node
288
Subscriber
Analog VOD Set Top Terminals
AMPLIFIER
308
HEADEND
208

FIG. 6a

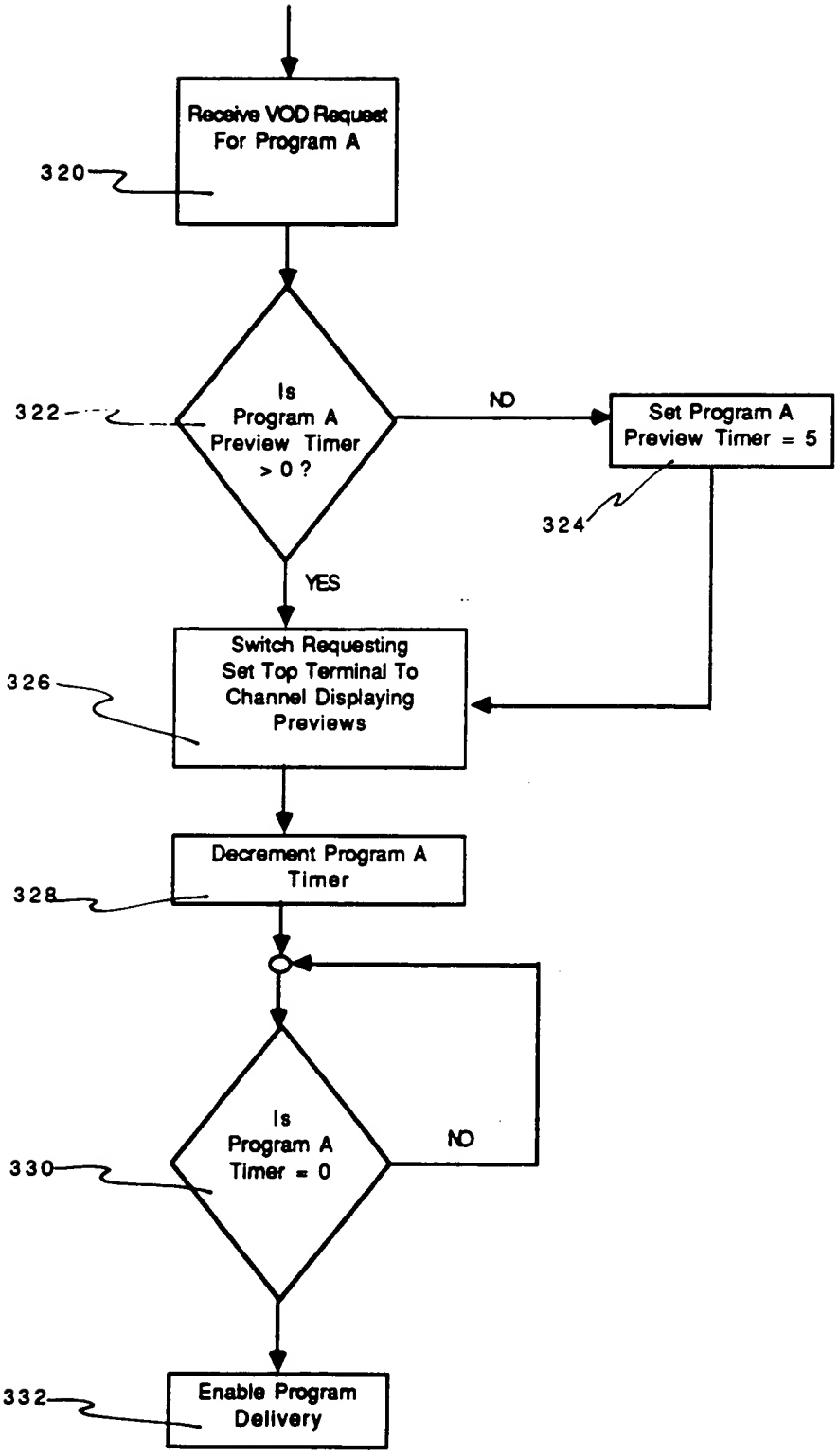

Receive VOD Request For Program A
320
Is Program A Preview Timer > 0 ?
322
NO
Set Program A Preview Timer = 5
324
YES
Switch Requesting Set Top Terminal To Channel Displaying Previews
326
Decrement Program A Timer
328
Is Program A Timer = 0
330
NO
Enable Program Delivery
332

FIG. 6b

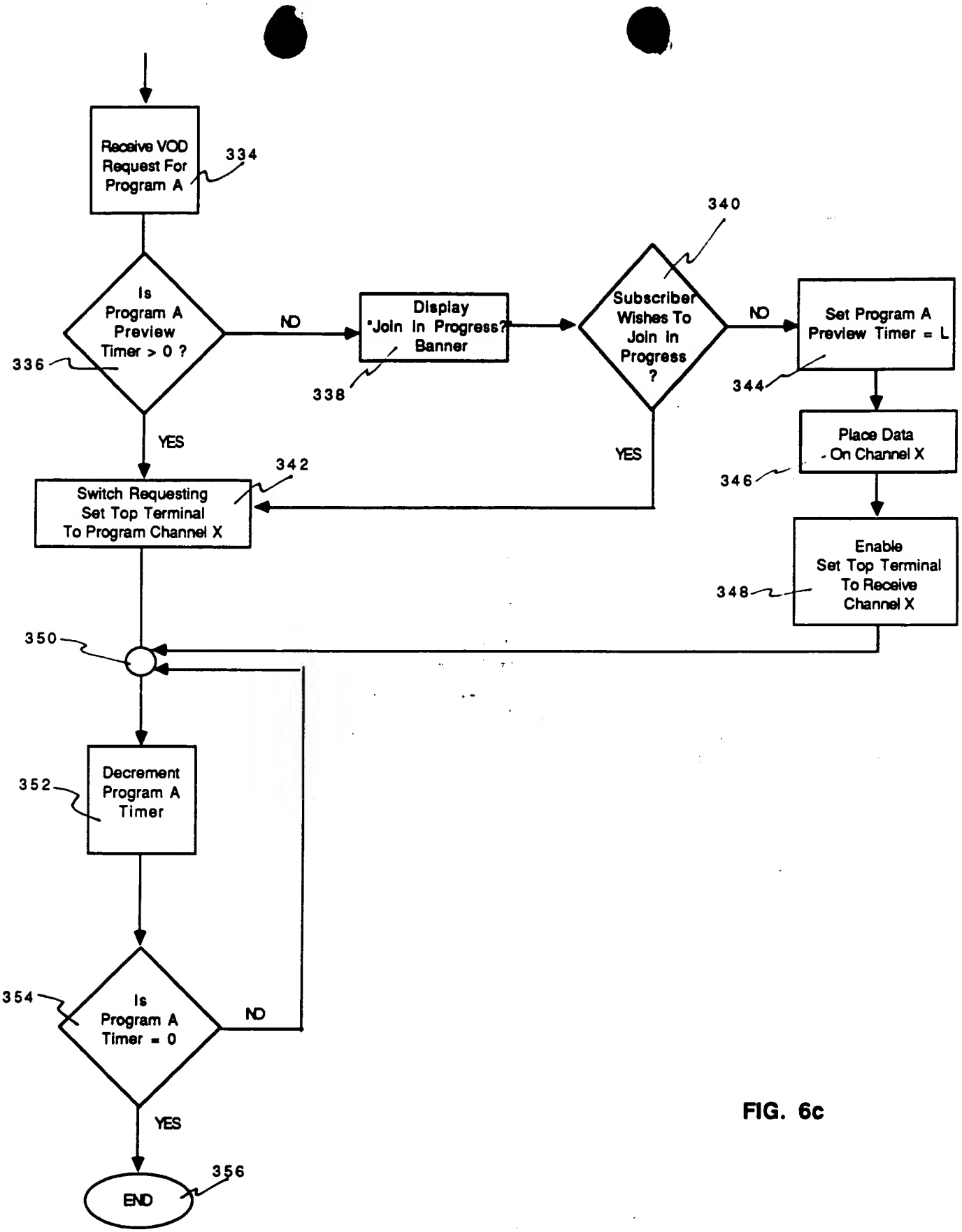

Receive VOD Request For Program A
334
Is Program A Preview Timer > 0 ?
336
NO
Display "Join In Progress?" Banner
338
Subscriber Wishes To Join In Progress ?
340
NO
Set Program A Preview Timer = L
344
Place Data On Channel X
346
Enable Set Top Terminal To Receive Channel X
348
YES
Switch Requesting Set Top Terminal To Program Channel X
342
350
Decrement Program A Timer
352
Is Program A Timer = 0
354
NO
YES
END
356

FIG. 6c

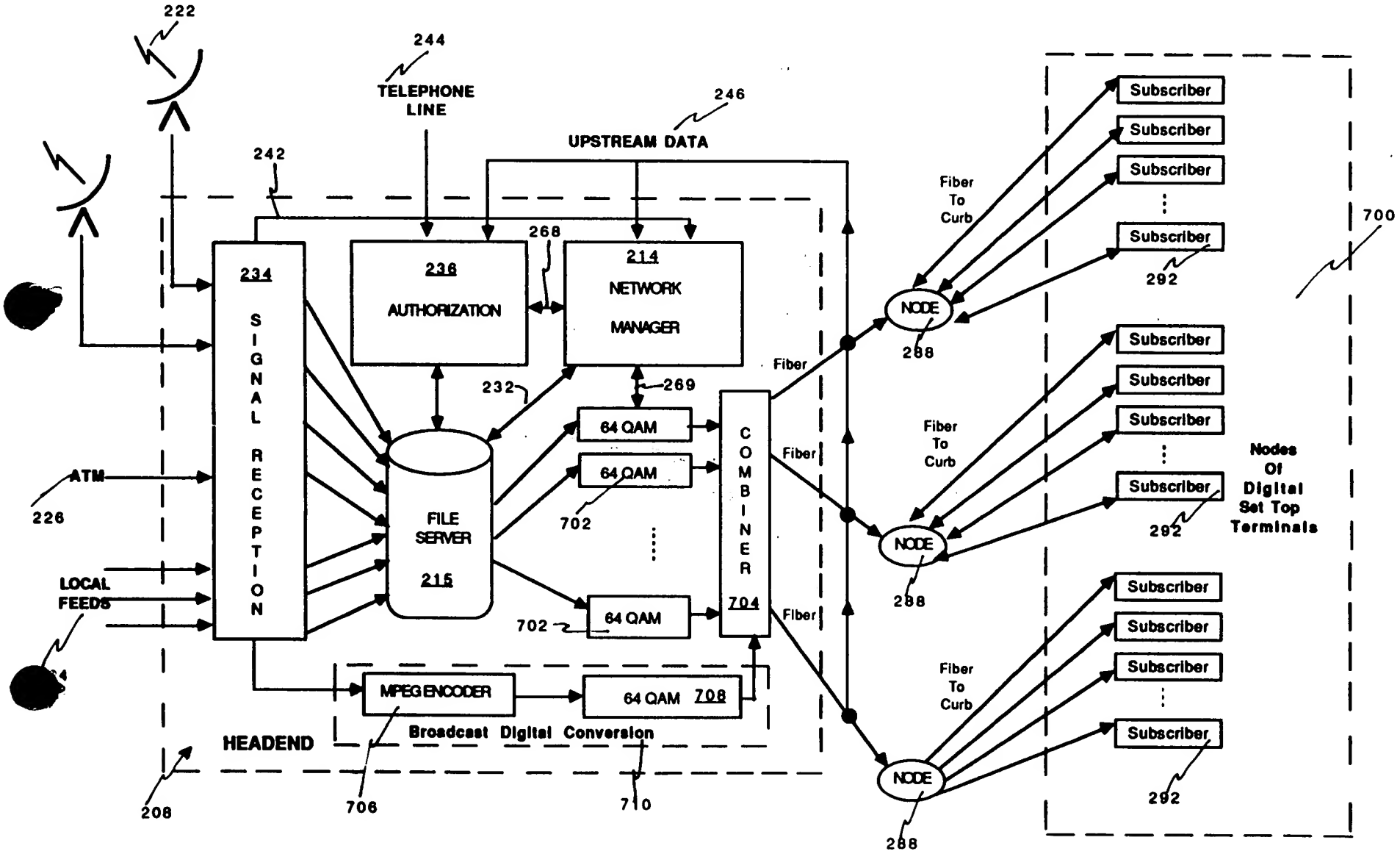


FIG. 7

09285249.010299

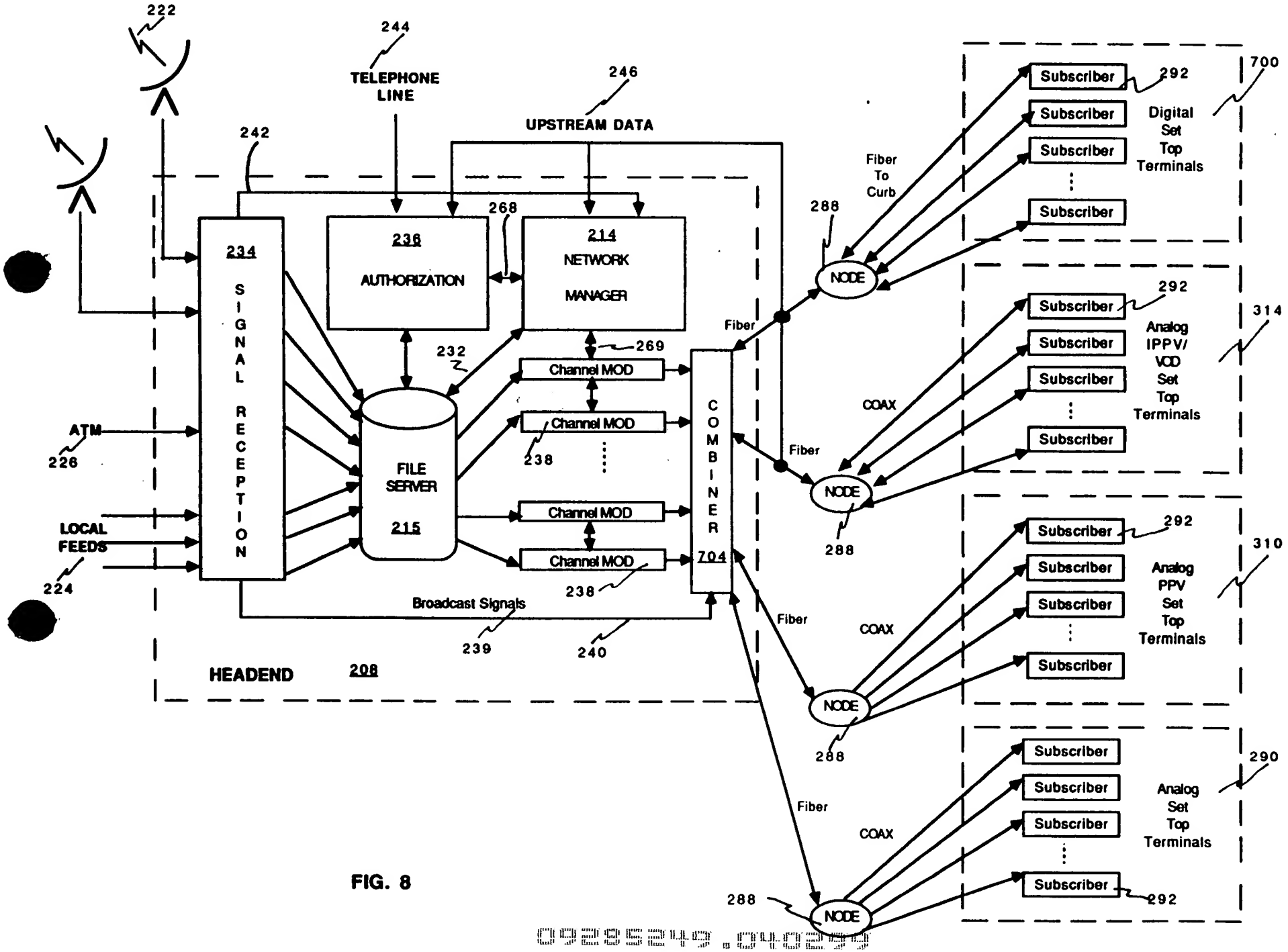

222
244
TELEPHONE LINE
246
UPSTREAM DATA
242
234
SIGNAL RECEPTION
236
AUTHORIZATION
268
214
NETWORK MANAGER
232
269
FILE SERVER
215
Channel MOD
Channel MOD
Channel MOD
Channel MOD
238
238
ATM
226
LOCAL FEEDS
224
Broadcast Signals
239
240
HEADEND
208
COMBINER
704
Fiber
Fiber
Fiber
Fiber
288
288
288
288
NODE
NODE
NODE
NODE
Fiber To Curb
COAX
COAX
COAX
700
Subscriber
292
Digital Set Top Terminals
314
Analog IPPV/ VOD Set Top Terminals
310
Analog PPV Set Top Terminals
290
Analog Set Top Terminals

FIG. 8

MONTHLY PROGRAMS WATCHED MATRIX

PROGRAM CATEGORIES

TIME SLOT	SPORTS	NEWS	MOVIES	CHILDREN	ENTERTAINMENT
0000-0400	0	2	2	0	0
0400-0800	0	2	0	3	0
0800-1200	2	0	10	2	6
1200-1600	20	1	3	5	4
1600-2200	8	6	13	0	5
2000-2400	0	10	2	4	2

FIG. 9

0029549 .0029549

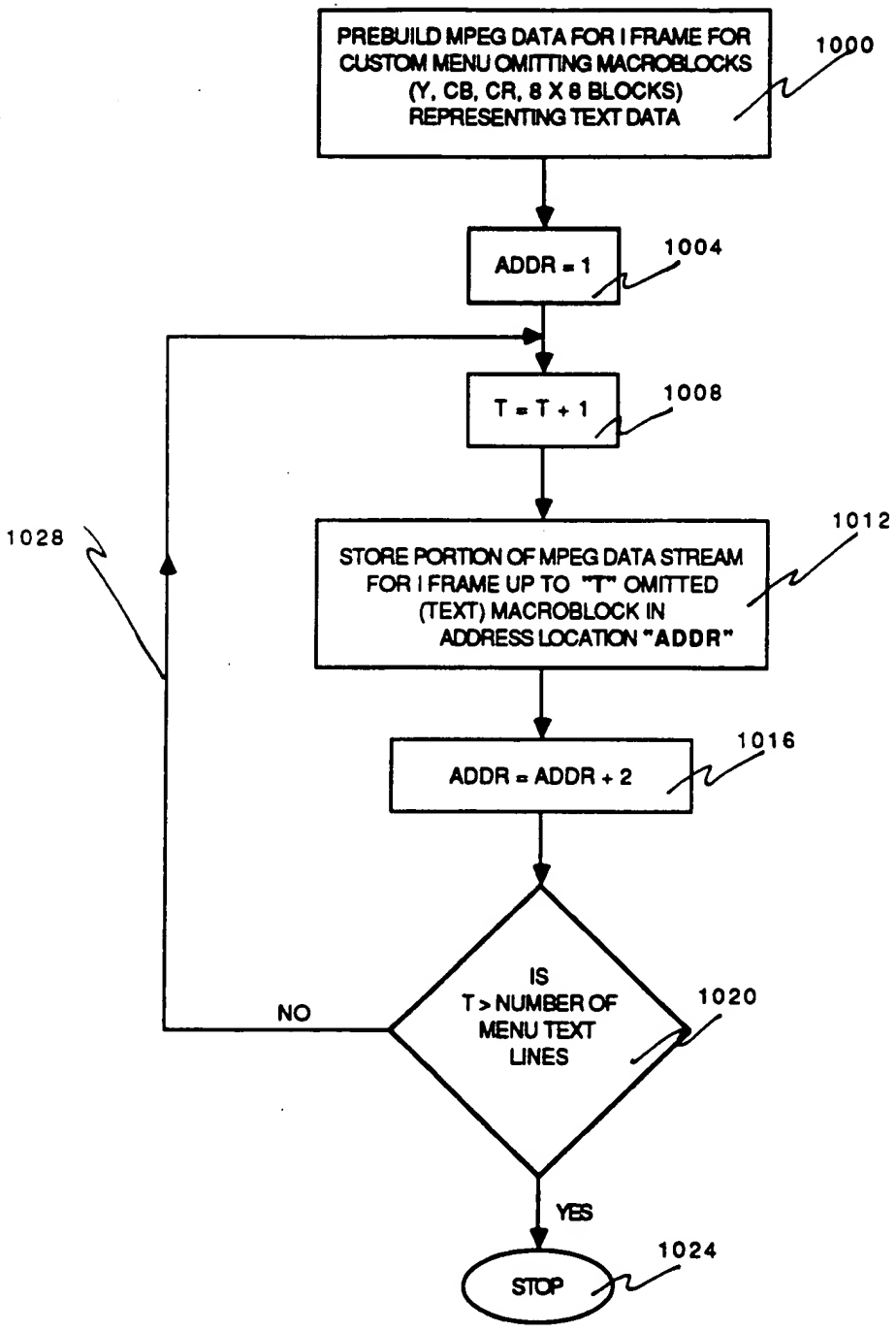

PREBUILD MPEG DATA FOR I FRAME FOR CUSTOM MENU OMITTING MACROBLOCKS (Y, CB, CR, 8 X 8 BLOCKS) REPRESENTING TEXT DATA
1000
ADDR = 1
1004
T = T + 1
1008
STORE PORTION OF MPEG DATA STREAM FOR I FRAME UP TO "T" OMITTED (TEXT) MACROBLOCK IN ADDRESS LOCATION "ADDR"
1012
1028
ADDR = ADDR + 2
1016
IS T > NUMBER OF MENU TEXT LINES
1020
NO
YES
STOP
1024

FIG. 10a

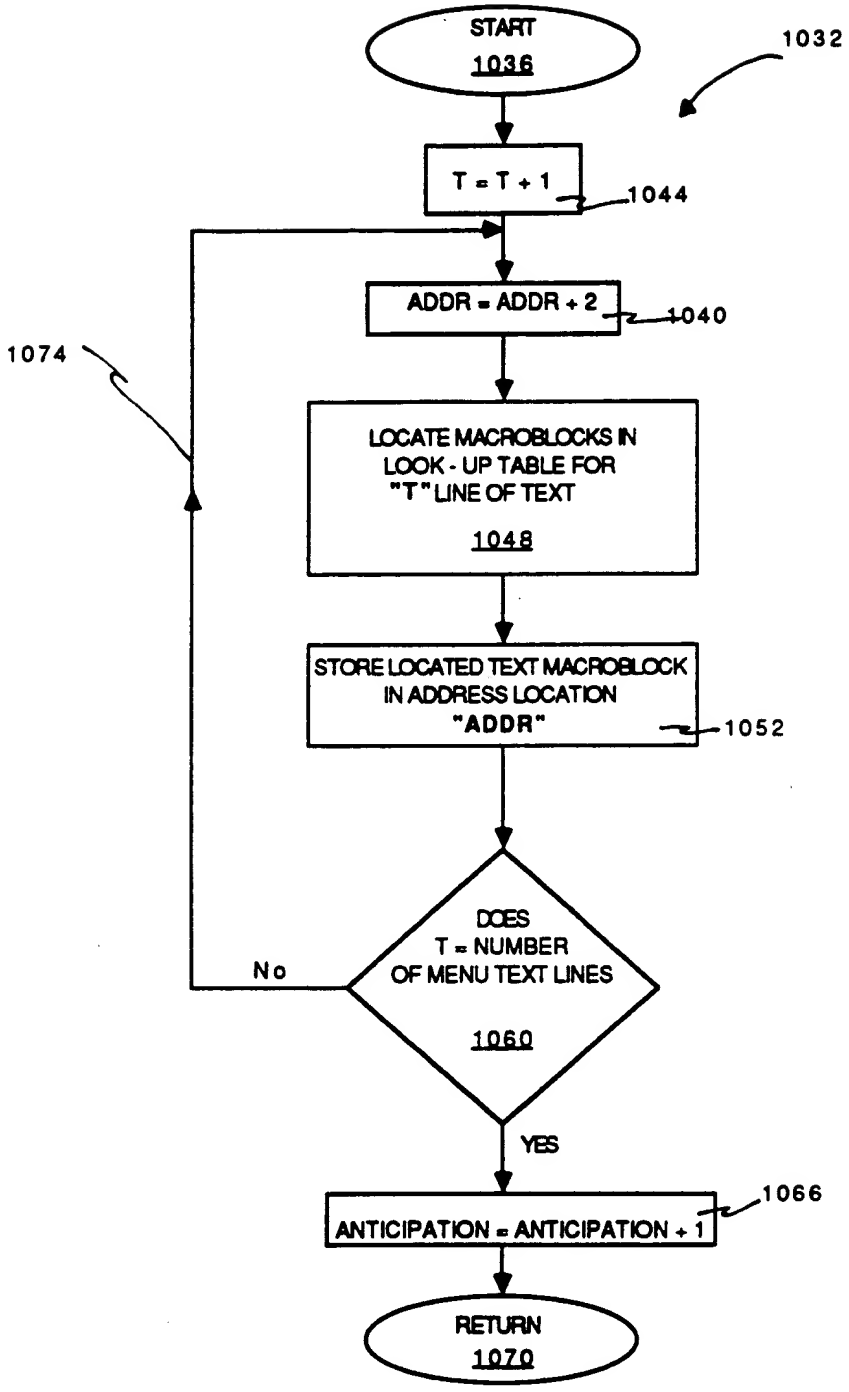

START
1036
1032
T = T + 1
1044
ADDR = ADDR + 2
1040
1074
LOCATE MACROBLOCKS IN
LOOK - UP TABLE FOR
"T" LINE OF TEXT
1048
STORE LOCATED TEXT MACROBLOCK
IN ADDRESS LOCATION
"ADDR"
1052
DOES
T = NUMBER
OF MENU TEXT LINES
1060
No
YES
ANTICIPATION = ANTICIPATION + 1
1066
RETURN
1070

FIG. 10b

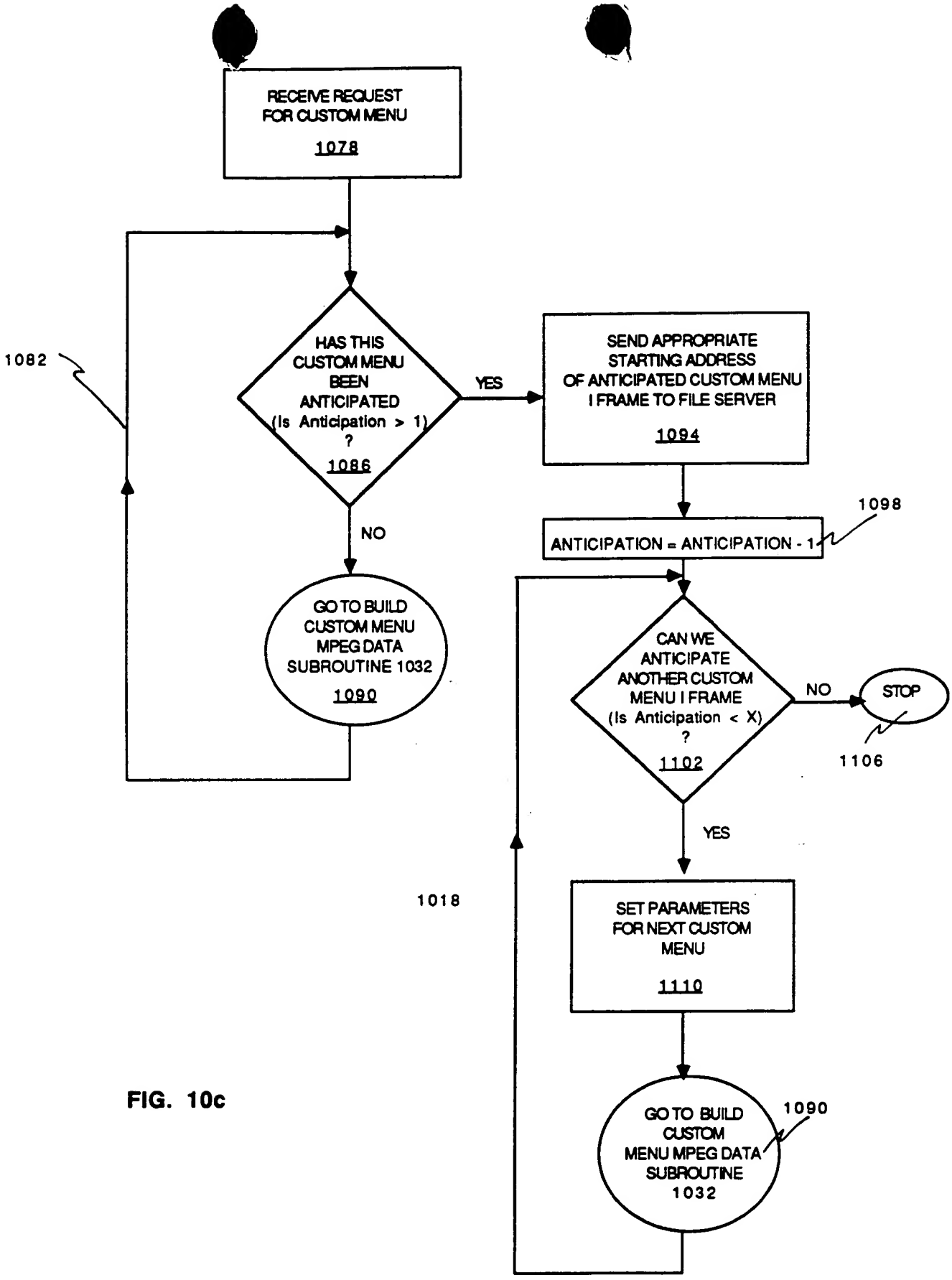

RECEIVE REQUEST FOR CUSTOM MENU
1078
1082
HAS THIS CUSTOM MENU BEEN ANTICIPATED (Is Anticipation > 1) ?
1086
YES
NO
SEND APPROPRIATE STARTING ADDRESS OF ANTICIPATED CUSTOM MENU I FRAME TO FILE SERVER
1094
1098
ANTICIPATION = ANTICIPATION - 1
GO TO BUILD CUSTOM MENU MPEG DATA SUBROUTINE 1032
1090
CAN WE ANTICIPATE ANOTHER CUSTOM MENU I FRAME (Is Anticipation < X) ?
1102
NO
STOP
1106
YES
1018
SET PARAMETERS FOR NEXT CUSTOM MENU
1110
GO TO BUILD CUSTOM MENU MPEG DATA SUBROUTINE 1032
1090

FIG. 10c

Interactive Question / Program Number	I	II	III	IV	V	VI	VII	VIII	IX	X
Program No. 1	A B C D	A/B	A B C D	A B C D	A|B|C	A B C D	A|B|C	A B C D	A/B	A B C D
Program No. 2	A B C D	A|B|C	A B C D	A/B	A B C D	A/B	A B C D	A B C D	A B C D	A|B|C
Program No. 3	A/B	A B C D	A|B|C	A B C D	A/B	A B C D	A|B|C	A B C D	A B C D	A/B
Program No. 4	A B C D	A|B|C	A B C D	A/B	A B C D	A|B|C	A B C D	A B C D	A/B	A B C D
Program No. 5	A B C D	A|B|C	A/B	A B C D	A/B	A B C D	A|B|C	A B C D	A B C D	A|B|C
Program No. 6	A|B|C	A B C D	A B C D	A/B	A B C D	A/B	A B C D	A B C D	A|B|C	A B C D
Program No. 7	A/B	A B C D	A|B|C	A B C D	A/B	A B C D	A B C D	A|B|C	A B C D	A/B
Program No. 8	A B C D	A/B	A B C D	A|B|C	A B C D	A|B|C	A B C D	A/B	A B C D	A B C D

FIG. 11